

ARE OPEN ACCESS JOURNALS THE ANSWER TO HIGH PUBLISHER COSTS?

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ABSTRACT: There is a growing consensus that current method of scholarly communication is not sustainable. The problem has been with us for decades and cannot be solved by simply increasing a library's budget. The core of the crisis is cultural and is driven primarily by the publishing conventions of the academy. Many look to open access journals as a solution to high publisher costs. There are benefits and challenges in developing open access models for scholarly communication. For example, titles from PLoS (Public Library of Science) and SPARC (Scholarly Publishing and Academic Resources Coalition) may help lower subscription costs for libraries and increase access. However, will faculty publish in these journals? How will faculty and researchers from small or less affluent institutions participate? This discussion summarizes the complex issues that surround this new landscape in scholarly communication and provides background information that the librarian can use to evolve the discussion among faculty within their institution.

DEFINITION OF OPEN ACCESS E-JOURNALS

As you read about Open Access (OA) you will find many similar definitions that converge on four concepts: 1) "cost free" online access to the reader, 2) free of unnecessary copyright licensing restrictions (Suber 2004), 3) free from filters and censors, and 4) for the purposes of education and research. For example, open access refers to works that are created with no expectation of direct monetary return and made available at no cost to the reader on the public Internet for purposes of education and research (ARL 2004). According to the Public Library of Science (PLOS), an Open Access Publication is one that meets the following two conditions:

- The author(s) and copyright holder(s) grant(s) to all users a free, irrevocable, worldwide, perpetual right of access to, and a license to copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship, as well as the right to make small numbers of printed copies for their personal use.
- A complete version of the work and all supplemental materials, including a copy of the permission as stated above, in a suitable standard electronic format is deposited immediately upon initial publication in at least one online repository that

is supported by an academic institution, scholarly society, government agency, or other well-established organization that seeks to enable open access, unrestricted distribution, interoperability, and long-term archiving (for the biomedical sciences, PubMed Central is such a repository) (PLoS 2004).

However, in all known cases of "open access" journals someone must pay for the publication costs for OA journal articles. We know from experience that publishers are not inclined to absorb the expense of open access to online journals. In most scenarios the author pays. For example, PLoS will "charge authors a fair price that reflects the actual cost of publication. However, the ability of authors to pay publication charges will never be a consideration in the decision whether to publish" (PLoS 2004). Some libraries have offered to subsidize publication charges for articles by their faculty published in open-access journals and disciplinary repositories (Graham 2003). Although this strategy might be effective in building some momentum within the library's parent organization or faculty, it is not widely accepted as a best practice.

SO, WHY SHOULD LIBRARIANS CARE?

Regardless of who covers the up-front costs, are open access journals really the panacea to escalating publisher costs? For libraries, this is a key issue. The cost of commercial and society publications continues to escalate. Libraries will be forced to either pay the higher prices or cancel journal subscriptions. "The unsustainable economics of scholarly publishing is not a problem for academic libraries but for the academic institution of which they form a part. When addressed as such, it can and may be solved" (Greenstein 2004). Scholarly publishing models, such as Open Access and Institutional Repositories, will only succeed when the faculty/researchers and their academic institutions acknowledge the problem and initiate change.

There are four compelling reasons for librarians to learn about and advocate open access:

Cost. While the price of academic journals increases in excess of the Consumer Price Index, libraries are struggling to come up with the money to pay for information that is essential for scholarly investigation. Open Access has the potential to "strip huge costs from the publishing system, and by embedding the new OA regime primarily in the not-for-profit sector, OA can return extortionate profits back to the research community" (Esposito 2004). In this event, Librarians will have to campaign strongly for these 'profits' to be returned to library collection budgets.

Access. Because rising costs force librarians to cancel subscriptions, timely, on-site access to journal information is often sacrificed. "This raises the specter (for example) of a cardiologist not being able to keep up with the latest developments in his or her field. The electronic dimension of OA also permits published research to be accessed in remote parts of the world" (Esposito 2004), and also by means of 24/7 remote access to one's own licensed library resources.

New services. The reader may want to use published materials in a way that may be impossible in the absence of OA, whether the proprietary publications are in hardcopy or online. "A user may want to search the texts of dozens of journals simultaneously or develop an index of findings from multiple publications (perhaps from multiple publishers) or use an abstract of the texts of published materials as inputs for search algorithms. Behind many potential OA services is the belief that a published document has one value in and of itself but a different (and greater) one in the context of aggregation with other research documents" (Esposito 2004). Open-access articles also make new, more meaningful measures of research impact possible (Antelman 2004).

Citation impact. In April 2004, ISI released a study titled "The Impact of Open Access Journals," in which it compared impact factor and the number of citations of open-access journals in the natural sciences with non-open-access journals. ISI found that "the OA journals have a broadly similar citation pattern to other journals, but may have a slight tendency to earlier citations" (Thompson ISI 2004). These findings are qualified by noting many of the journals in the study only recently shifted to open access, that high-profile titles (such as PLoS Biology) were too new to be included, and that their relatively small sample included many regional titles that would not be expected to be high-impact journals. Regardless, it is safe to say, "across a variety of disciplines, open-access articles have a greater research impact than articles that are not freely available" (Antelman 2004).

BARRIERS TO CHANGE

Many of our faculty serve on the editorial boards of prestigious journals. In some cases, editors are aware of the crisis in scholarly communication and the issues surrounding open-access. However, this is not always true. A recent experience at Syracuse University, described, hereafter, illustrates this point.

Syracuse University is a large, doctoral-level, research institution. However, open access and scholarly communication do not seem to be high priority issues for the university...yet. Working with other science librarians in the upstate New York research community, the author works with colleagues and faculty to help them understand and participate in open access publishing, institutional repositories and scholarly communication through library dialogues and seminars. While preparing for an in-library discussion of open-access in spring 2004, the authors learned through a survey to faculty/editors, that there was very little understanding or appreciation of the issues surrounding open access publishing (Berteaux 2004). It became clear that the foundation for a new scholarly communication paradigm which includes open access and institutional repositories will require a great deal of work on the author's campus before any major new scholarly communication initiatives can be realized.

Bo-Christer Björk presents six different types of barriers for increased open access publishing and their relative importance as a starting point for a discussion about the prerequisites and barriers for open access publishing: legal framework, information technology infrastructure, business models, indexing services and standards, academic reward system, marketing and critical mass. In Table 1, the number of asterisks (from zero to three) denotes the importance of a particular item in hindering a rapid transition process. For example, in Björk's opinion there are no (or very small) legal obstacles to the proliferation of open access journals, whereas this is a very central issue to be solved if institutional repositories are to take a prominent position in the academic communication system (Björk 2004).

	Open access Journals	Subject-specific repositories	Institutional repositories
Legal framework	-	*	**
IT-infrastructure	**	*	**
Business models	***	**	*
Indexing services and standards	**	-	***
Academic reward system	***	*	*
Marketing and Critical mass	***	**	***

Table 1: Björk's classification of different types of barriers for increased open access publishing and their relative importance

WHAT YOU CAN DO

Many librarians, especially those who work in smaller, one-person libraries, may feel there is very little they can do to promote the concept or initiate a dialogue. In cases like this, strategies do exist that can help you prepare for changes. For example, be aware of status of major disciplinary journals and new OA journals in your faculty's research areas. Librarians can also conduct a survey and talk with your faculty/editors about new publishing models and their effect on peer review, promotion and tenure within your organization. Part of this discussion includes informing your faculty of the various OA models, opportunities, costs and strategies for paying. Librarians are often welcome to speak at local, regional, or international scientific/technical meetings such as *Oceans*, *MTS*, *AGU*, etc.

Fortunately, the leaders in the area of open access and institutional repositories, such as DPubs and Internet First University Press (Cornell University), Dspace (Massachusetts Institute of Technology), e-Scholarship Repository (University of California), etc., provide models from which we can gain insight, information and inspiration. For example, MIT makes the following recommendations to their faculty (Wolpert 2004):

- Deposit copies of research papers and related material in Dspace

- Publish in and review for journals that are open access or reasonably priced
- Sign agreements with publishers that enable the author to retain rights to the content of their articles and books
- Consider alternative publishers for a journal they edit, if they do not agree with the current publisher's business practices
- Become familiar with their society's publishing program, and
- Be an advocate for change if it is warranted.

The librarian's role in beginning the dialogue, supporting OA on their home campus and/or funding OA fees varies. There are two factors to consider within your organization:

- 1) Faculty/researcher/editor understanding, perception and reaction to Open Access
- 2) Broader issues of funding, tenure process, some of the resources and activities that are out there, and some of the pros and cons (that do not also emerge in the editor/faculty comments).

To obtain this information for your organization or campus, you may need to explore scholarly communication issues within your library and among your colleagues, conduct a poll/survey of faculty, arrange a seminar, and/or send a letter to faculty (especially those who are editors) asking for "thoughts from the field". As you explore open access and scholarly communication issues within your library, you should ask questions, such as:

- What are the benefits and what are the potential challenges in developing open access models for scholarly communication?
- Will PLOS, SPARC, and other open access titles help lower subscription costs for libraries and increase access for your primary users?
- Will your faculty publish in open access journals that are peer reviewed but may only be available on-line?
- What are the issues surrounding this new landscape in scholarly communication that impact your library and organization?

If you perceive that open access and scholarly communication issues are **not** well understood on your campus and you get a feeling your faculty want more information you could start by asking what they do know about OA. Hereafter, is a brief description of a method used to prepare for a Syracuse University Library seminar (Berteaux 2004) in April 2004.

Elizabeth Elkins, the librarian at the SUNY College of Environmental Science and Forestry (ESF) sent a letter to ESF faculty known to serve on editorial boards. The letter included questions, such as those listed, below, which may help you shape the scholarly communication discussion with your faculty/researchers/editors:

- Are you hearing much about open access journal publishing in your scholarly networks? Is this a topic of interest/discussion at your professional meetings?

- Does this solve the problem of high cost journal publishing (for you/your department/the academy)? Does the concept of charging a fee at the front end to cover publication costs and providing the content free on the back end via the Internet make sense?
- Would you or your colleagues publish in an open access journal? Does this fulfill the function of scholarly communication?
- Would you consider these publications authoritative and credible? Would you cite them in your work?
- If these journals are indeed peer-reviewed, does the format really matter?



KEEPING UP WITH OPEN ACCESS DEVELOPMENTS

Librarians can use the new *Open Access* brochure published by the Association of Research Libraries (ARL) for library outreach to scientists and scholars. This brochure presents a more specific approach to change and concisely describes benefits of OA.

[www.arl.org/create/resources/OpenAccess.pdf]

A supplemental bibliography of readings and online sources is included in the appendix. These readings will help you put open access into perspective, relative to your own organization and help answer questions.

CONCLUSION

Advances in Scholarly Communication continue to emerge and, in some cases, appear to be picking up momentum. As this paper goes to press, the National Institutes of Health is proposing to require researchers funded by NIH to make their results available to the public without charge in PubMed. On the author's home campus, the concept has not evolved beyond general comments admitting that scholarly communication is an "issue" the university should consider.

Overall, the answer to the question, "Are open access journals the answer to high publisher costs?" is "Not yet". However, librarians can begin to promote open access actively by distributing information and preparing themselves to initiate the discussion on their home campus by reading, talking with colleagues, monitoring mailing lists and attending meetings or workshops where the agenda includes topics of open access, institutional repositories and alternatives to traditional scholarly publishing.

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Appendix

OPEN ACCESS: ANNOTATED BIBLIOGRAPHY

A supplemental list of readings and online sources to put open access in perspective and help answer questions. Prepared by Susan Berteaux for the IAMSLIC Conference (September 2004, Hobart, Tasmania)

Access to the literature: the debate continues. *Nature Web Focus*. [Online]. Available: <http://www.nature.com/nature/focus/accessdebate> [Accessed October 12, 2004]. This on line debate began in April 2004 to discuss current trends and future possibilities regarding access to scientific literature.

Antelman, Kristin. 2004. Do open access articles have a greater research impact? *College & Research Libraries*, 65(1): 372-383.

Association of Learned and Professional Society Publishers (ALPSP). 2004. [Online]. Available: <http://www.alpsp.org/default.htm> [Accessed October 12, 2004]. ALPSP is the international trade association for not-for-profit publishers and those who work with them.

Association of Research Libraries. 2004. *Framing the Issue: Open Access*. [Online]. Available: http://www.arl.org/scomm/open_access/framing.html [Accessed October 12, 2004].

Definition of open access. See also:

- Open access overview. <http://www.earlham.edu/~peters/fos/overview.htm>
- Public Library of Science: open access. <http://www.plos.org/about/openaccess.html>
- Biomed Central open access charter. <http://www.biomedcentral.com/info/about/charter>
- How should we define open access? *SPARC Open Access Newsletter*. 64. <http://www.earlham.edu/~peters/fos/newsletter/08-04-03.htm>

Björk, Bo-Christer. 2004. Open access to scientific publications--an analysis of the barriers to change? *Information Research* 9(2). [Online]. Available: <http://informationr.net/ir/9-2/paper170.html> [Accessed October 12, 2004]. Classifies different types of barriers for increased open access publishing and their relative importance.

Budapest Open Access Initiative. *Open Access Journal Business Guides*. [Online]. Available: <http://www.soros.org/openaccess/oajguides/index.shtml> [Accessed October 12, 2004].

Includes guides to business planning for converting a subscription-based journal to open access, launching a new open access journal and a model business plan.

Create Change. [Online]. Available: <http://www.createchange.org/resources.html> [Accessed October 12, 2004].

Bibliography of readings from *Create Change* web site. See also:

- *Create Change* brochure.
<http://www.arl.org/create/resources/CreateChange2003.pdf>
SPARC, ARL, and ACRL brochure suitable for library outreach.
- *Open Access brochure*. <http://www.arl.org/create/resources/OpenAccess.pdf>
Describes a more specific approach to change and concisely describes benefits of OA. Librarians can use this new *Open Access* brochure for outreach to scientists and scholars.

Directory of Open Access Journals. [Online]. Available: <http://www.doaj.org/> [Accessed October 12, 2004].

EPrints. [Online]. Available: <http://www.eprints.org/> [Accessed October 12, 2004].

Contains referred online literature regarding self archiving initiatives and software

Esposito, Joseph J. 2004. The devil you don't know: the unexpected future of open access publishing. *First Monday* 9(8). [Online]. Available: http://firstmonday.org/issues/issue9_8/esposito/index.html [Accessed October 12, 2004].

Graham, Peter S. 2003. Open access to scholarship – new opportunities for the University. *The Library Connection* (Winter 2003-2004). [Online]. Available: <http://libwww.syr.edu/information/libassoc/connection/winter0304.pdf> [Accessed October 12, 2004].

JISC/OSI *Journal Authors Survey Report*. [Online]. Available: http://www.jisc.ac.uk/uploaded_documents/JISCOAreport1.pdf [Accessed October 12, 2004].

This report summarizes a survey of authors' experiences publishing in traditional and open access journals.

Lawrence, Steve. 2001. Online or invisible. Edited version appears in: *Nature* 411(6837): 521. [Online]. Available: <http://www.neci.nec.com/~lawrence/papers/online-nature01/> [Accessed October 12, 2004].

Articles freely available online are more highly cited. For greater impact and faster scientific progress, authors and publishers should aim to make research easy to access.

Morris, Sally. 2003. Open publishing. *Learned Publishing*. 16(3): 171-176. [Online]. Available: <http://lysander.ingentaselect.com/vl=5802157/cl=18/nw=1/rpsv/cgi-bin/linker?ini=alpsp&reqidx=/cw/alpsp/09531513/v16n3/s3/p171> [Accessed October 12, 2004].

Despite increasing pressure from academia to make the results of publicly funded research freely available to all, some functions performed by publishers should survive.

National Institutes of Health. 2004. *Proposed NIH Policy*. [Online]. Available: <http://www.nih.gov/about/publicaccess/index.htm> [Accessed October 12, 2004]. Proposal to require researchers funded by NIH to make their results available to the public without charge in PubMed.

Open Access to Scientific and Technical Information: State of the Art and Future Trends. 2003. [Online]. Available: http://www.inist.fr/openaccess/index_en.php [Accessed October 12, 2004].

Multi-organizational meeting on the subject of Open Access, state of the art and future developments, held in Paris, January 2003. Includes links to papers and recorded sessions.

- SPARC (Scholarly Publishing and Academic Resources Coalition)
Online: <http://www.inist.fr/openaccess/transparentes/prosser/index.htm>
- Budapest Open Access Initiative.
Online: <http://webcast.in2p3.fr/openaccess/guedon.ram>
- FIGARO (European Academic Digital Publishing Initiative)
Online: <http://www.inist.fr/openaccess/transparentes/gradmann/index.htm>
- E-BIOSCI (European platform for access and retrieval of full text and factual information on the Life Sciences).
Online: <http://www.inist.fr/openaccess/transparentes/grivell/index.htm>

Open Archives Initiative. [Online]. Available: <http://www.openarchives.org/> [Accessed October 12, 2004].

The Open Archives Initiative develops and promotes interoperability standards that aim to facilitate the efficient dissemination of content.

Prosser, David C. 2003. From here to there: a proposed mechanism for transforming journals from closed to open access. *Learned Publishing* 16(3):163-166. [Online]. Available: <http://lysander.ingentaselect.com/vl=5802157/cl=18/nw=1/rpsv/cgi-bin/linker?ini=alpsp&reqidx=/cw/alpsp/09531513/v16n3/s1/p163> [Accessed October 12, 2004].

A major barrier to greater acceptance of an open access model for journal publishing has been the concern of many journal owners that they will not easily be able to migrate from the current subscription-based model to open access. This paper presents a potential migration path that may reduce the financial risk to journal owners, while allowing them to offer open access to their authors.

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The Scholarly Publishing and Academic Resources Coalition (SPARC). [Online]. Available: <http://www.arl.org/sparc/> [Accessed October 12, 2004].

Suber, Peter. *Guide to the Open Access Movement*. [Online]. Available: <http://www.earlham.edu/~peters/fos/guide.htm> [Accessed October 12, 2004]. Peter Suber's guide to the terminology, acronyms, initiatives, standards, technologies, and players in the open-access or free online scholarship (FOS) movement. Suber's web pages are among the best for tracking developments on open access, or to follow news on neighboring topics in some depth.

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Vergano, Dan. 2004. Scientists want research papers freely available. *USA TODAY*. August 29. [Online]. Available: http://www.usatoday.com/news/science/2004-08-29-free-research_x.htm [Accessed October 12, 2004].

Wolpert, Ann J. and Zahn, Markus. 2004. *The changing environment of scholarly communication: challenges and opportunities for faculty*. [Online]. Available: <http://libraries.mit.edu/about/journals/wolpert.html> [Accessed October 12, 2004].